AMENDMENT TO THE CLAIMS:

The following listing of the claims replaces all previous versions of the claims in the application.

LISTING OF CLAIMS

Claim 1 (Currently Amended): A pressure fluid operated impact device comprising a frame whereto a tool is mountable movably in its longitudinal direction, control means for controlling pressure fluid feed ~~by~~ of the impact device, and means for generating a stress ~~impulse~~ pulse in the tool by the pressure of a pressure fluid, wherein

the impact device comprises a working chamber entirely filled with pressure fluid and, in the working chamber, a transmission piston movably mounted in the longitudinal direction of the tool with respect to the frame, an end of the transmission piston facing the tool coming into contact with the tool either directly or indirectly at least during the generation of the stress pulse, the transmission piston, in its axial direction with respect to the tool on the opposite side thereof, being provided with a pressure surface located towards the working chamber,

the impact device comprises energy charging means for charging energy of the pressure fluid to be fed to the impact device necessary for generating the stress pulse, and in that the control means are configured to allow periodically and alternately a pressure fluid having a pressure higher than the pressure of the pressure fluid present in the working chamber to flow to the working chamber, thus causing a sudden increase in the pressure in the working chamber and, consequently, a force pushing the transmission piston in the direction of the tool, compressing the tool in the longitudinal direction and thus generating a stress pulse in the tool,

the generation of the stress pulse ending substantially at the same time as the influence of the force on the tool ends, and, correspondingly, to discharge pressure fluid from the working chamber in order to enable the transmission piston to return to its substantially original position.

Claim 2 (Previously Presented): An impact device as claimed in claim 1, wherein in order to stop the influence of the force, the control means are configured to prevent pressure fluid from entering the working chamber.

Claim 3 (Previously Presented): An impact device as claimed in claim 1, wherein the control means are configured to stop the influence of the force by discharging pressure fluid from the working chamber.

Claim 4 (Previously Presented): An impact device as claimed in claim 1, further comprising stop elements for stopping the movement of the transmission piston in the direction of the tool such that the influence of the force on the tool ends.

Claim 5 (Previously Presented): An impact device as claimed in claim 1, wherein the impact device, as an energy charging means, comprises an energy charging space which is entirely filled with pressurized pressure fluid and whose volume is substantially large as compared with the volume of a pressure fluid amount to be fed to the working chamber during the generation of one stress pulse.

Claim 6 (Previously Presented): An impact device as claimed in claim 5, wherein when the impact device is in operation, pressure fluid is fed to the energy charging space such that a predetermined pressure level is maintained in the energy charging space, and that the control means are configured to allow periodically and alternately pressure fluid to flow from the energy charging space to the working chamber and, consequently, to close the connection between the energy charging space and the working chamber.

Claim 7 (Previously Presented): An impact device as claimed in claim 1, wherein the control means comprise a rotating control valve comprising a plurality of successive openings in the direction of rotation thereof in order to feed pressure fluid from an energy charging space via a plurality of feed channels to the working chamber simultaneously.

Claim 8 (Previously Presented): An impact device as claimed in claim 7, wherein the length and cross-section of each feed channel are mutually the same.

Claim 9 (Previously Presented): An impact device as claimed in claim 1, further comprising at least two feed channels which differ in length or cross-sectional area or both and which lead from an energy charging space to the working chamber.

Claim 10 (Previously Presented): An impact device as claimed in claim 9, further comprising at least one valve to activate and deactivate the feed channels differing in length and/or cross-sectional area.

Claim 11 (Previously Presented): An impact device as claimed in claim 1, wherein a length of at least one feed channel from an energy charging space to the working chamber is adjustable.

Claim 12 (Previously Presented): An impact device as claimed in claim 5, wherein the energy charging space is a tank whose walls, due to the influence of pressure, yield such that the volume of the energy charging space increases as pressure increases.

Claim 13 (Previously Presented): An impact device as claimed in claim 5, wherein the energy charging space is a tank separate from the frame.

Claim 14 (Previously Presented): An impact device as claimed in claim 5, wherein at least one energy charging space is a hydraulic accumulator.

Claim 15 (Previously Presented): An impact device as claimed in claim 1, wherein the transmission piston is a membrane type piston.

Claim 16 (Previously Presented): An impact device as claimed in claim 1, wherein the feed force of the impact device is used for pushing the transmission piston back to its pre-stress-pulse position.

Claim 17 (Previously Presented): An impact device as claimed in claim 1, further comprising means for returning the transmission piston after an impact to its pre-impact position with respect to the impact device by bringing a separate force acting between the impact device and the transmission piston to influence the transmission piston, the force pushing the transmission piston towards the working chamber.

Claim 18 (Previously Presented): An impact device as claimed in claim 1, wherein the length of movement of the transmission piston in the working chamber is at least one millimeter.

Claim 19 (Previously Presented): A method of generating a stress pulse in a pressure fluid operated impact device as claimed in claim 1, wherein a pressure fluid having a pressure higher than the pressure of the pressure fluid present in the working chamber is fed to a working chamber of the impact device, the working chamber being entirely filled with pressure fluid, which, as a result of a sudden increase in the pressure in the working chamber produces a force pushing the transmission piston in the direction of the tool, compressing the tool in the longitudinal direction and thus generating a stress pulse in the tool, the generation of the stress pulse ending substantially at the same time as the influence of the force on the tool ends, and, correspondingly, to discharge pressure fluid from the working chamber in order to enable the transmission piston to return to its substantially original position.

Claim 20 (Previously Presented): A method as claimed in claim 19, wherein as an energy charging means, an energy charging space which is entirely filled with pressurized pressure fluid

and whose volume is substantially large as compared with the volume of a pressure fluid amount to be fed to the working chamber during the generation of one stress pulse.

Claim 21 (Previously Presented): A method as claimed in claim 20, wherein when the impact device is in operation, pressure fluid is fed to the energy charging space such that a predetermined pressure level is maintained in the energy charging space, and that the control means are coupled to allow periodically and alternately pressure fluid to flow from the energy charging space to the working chamber and, consequently, to close the connection between the energy charging space and the working chamber.

Claim 22 (Previously Presented): A method as claimed in claim 19, wherein a rotating control valve is used as a control means, comprising a plurality of successive openings in the direction of rotation thereof in order to feed pressure fluid from an energy charging space via a plurality of feed channels to the working chamber simultaneously.

Claim 23 (Previously Presented): A method as claimed in claim 19, wherein pressure fluid is fed from an energy charging space to the working chamber via at least two feed channels which are mutually the same in length and/or cross-sectional area.

Claim 24 (Previously Presented): A method as claimed in claim 19, wherein pressure fluid is fed from an energy charging space to the working chamber via at least two feed channels which differ in length and/or cross-sectional area.

Claim 25 (Previously Presented): A method as claimed in claim 24, wherein for adjustment of properties of a stress signal, feed channels which differ in length and/or cross-sectional area are activated and deactivated.

Claim 26 (Previously Presented): A method as claimed in claim 19, wherein a length of at least one feed channel from an energy charging space to the working chamber is adjustable.

Claim 27 (Previously Presented): A method as claimed in claim 19, wherein as the energy charging space , a tank is used whose walls, due to the influence of pressure, yield such that the volume of the energy charging space increases as pressure increases.

Claim 28 (Previously Presented): A method as claimed in claim 19, wherein as the energy charging space, a tank separate from the frame is used.

Claim 29 (Previously Presented): A method as claimed in claim 19, wherein as at least one energy charging space, a hydraulic accumulator is used.

Claim 30 (Previously Presented): A method as claimed in claim 19, wherein as the transmission piston, a membrane type piston is used.

Claim 31 (Previously Presented): A method as claimed in claim 19, wherein the transmission piston is pushed back to its pre-stress-pulse position by using the feed force of the impact device.

Claim 32 (Previously Presented): A method as claimed in claim 19, wherein for returning the transmission piston after an impact to its pre-impact position with respect to the impact device, a separate force acting between the impact device and the transmission piston is arranged to influence the transmission piston, the force pushing the transmission piston towards the working chamber.

Claim 33 (Previously Presented): A method as claimed in claim 19, wherein when generating a stress pulse, the transmission piston is moved for at least one millimeter in the working chamber.